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Sequence Listing was accepted.

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217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: Thu Sep 06 16:08:42 EDT 2007

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Application No: 10560918

Version No: 2.0

Input Set:**Output Set:****Started:** 2007-08-27 07:46:33.273**Finished:** 2007-08-27 07:46:37.624**Elapsed:** 0 hr(s) 0 min(s) 4 sec(s) 351 ms**Total Warnings:** 87**Total Errors:** 0**No. of SeqIDs Defined:** 108**Actual SeqID Count:** 108

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)
W 213	Artificial or Unknown found in <213> in SEQ ID (7)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)

Input Set:

Output Set:

Started: 2007-08-27 07:46:33.273
Finished: 2007-08-27 07:46:37.624
Elapsed: 0 hr(s) 0 min(s) 4 sec(s) 351 ms
Total Warnings: 87
Total Errors: 0
No. of SeqIDs Defined: 108
Actual SeqID Count: 108

Error code

Error Description

This error has occurred more than 20 times, will not be displayed

SEQUENCE LISTING

<110> BAKER, Matthew
WATKINS, John

<120> MODIFIED HIRUDIN PROTEINS AND T-CELL
EPITOPES IN HIRUDIN

<130> MER-142

<140> 10560918

<141> 2005-12-16

<150> PCT/EP2004/006943

<151> 2004-06-25

<150> EP 03014332.5

<151> 2003-06-26

<160> 108

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 30

<212> PRT

<213> hirudo medicinalis

<400> 1

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Glu	Gly	Thr	Pro	Lys	Pro	Glu	Ser	His	Asn	Asp	Gly	Asp	Phe	Glu
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<210> 2

<211> 65

<212> PRT

<213> Artificial Sequence

<220>

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X=T, A, H, Q, T, L;

X=A, G, H, K, N, P, Q, R, V;

X=A, D, E, G, H, K, N, Q, R, S, T, I;

<221> VARIANT

<222> 30, 40, 47, 48

<223> X=A, D, E, G, H, K, N, P, Q, R, S, T, L;

X=A, T, V;

X=T, K;

X=A, T, P

<221> VARIANT

<222> 53, 56

<223> X=E, N, R, D;

X=H, F

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1				5					10					15	
Glu	Gly	Ser	Val	Xaa	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Xaa	Xaa	Gly	Ser
			20					25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Xaa	Thr	Gly	Glu	Gly	Thr	Pro	Xaa	Xaa
		35				40						45			
Glu	Ser	His	Asn	Xaa	Gly	Asp	Xaa	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
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Gln															
65															

<210> 3

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<212> PRT

<213> hirudo medicinalis

<400> 3

Val	Val	Tyr	Thr	Asp	Cys	Thr	Glu	Ser	Gly	Gln	Asn	Leu	Cys	Leu	Cys
1				5					10					15	
Glu	Gly	Ser	Val	Val	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Ile	Leu	Gly	Ser
			20					25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Val	Thr	Gly	Glu	Gly	Thr	Pro	Lys	Pro
		35				40						45			
Glu	Ser	His	Asn	Asp	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
	50					55					60				
Gln															
65															

<210> 4

<211> 65

<212> PRT

<213> Artificial Sequence

<220>

<223> modified hirudin

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Val	Val	Tyr	Thr	Asp	Cys	Thr	Glu	Ser	Gly	Gln	Asn	Leu	Cys	Leu	Cys
1				5					10					15	
Glu	Gly	Ser	Val	Val	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Ala	Ala	Gly	Ser
			20					25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Val	Thr	Gly	Glu	Gly	Thr	Pro	Lys	Pro
		35				40						45			
Glu	Ser	His	Asn	Asp	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
	50					55					60				

Gln
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<211> 65
<212> PRT
<213> Artificial Sequence

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<400> 5
Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg His Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
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<211> 65
<212> PRT
<213> Artificial Sequence

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<223> modified hirudin

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Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Lys Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Ala Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
65

<210> 7
<211> 65
<212> PRT
<213> Artificial Sequence

<220>
<223> modified hirudin

<400> 7
Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15

Glu	Gly	Ser	Val	Val	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Glu	Lys	Gly	Ser
			20					25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Thr	Thr	Gly	Glu	Gly	Thr	Pro	Lys	Pro
		35					40					45			
Glu	Ser	His	Asn	Asp	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
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Gln															
65															

<210> 8
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 <212> PRT
 <213> Artificial Sequence

<220>
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Val	Val	Tyr	Thr	Asp	Cys	Thr	Glu	Ser	Gly	Gln	Asn	Leu	Cys	Leu	Cys
1				5					10					15	
Glu	Gly	Ser	Val	Val	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Glu	Lys	Gly	Ser
		20						25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Val	Thr	Gly	Glu	Gly	Thr	Pro	Lys	Pro
	35					40						45			
Glu	Ser	His	Asn	Glu	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
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Gln															
65															

<210> 9
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 <212> PRT
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<220>
 <223> modified hirudin

Val	Val	Tyr	Thr	Asp	Cys	Thr	Glu	Ser	Gly	Gln	Asn	Leu	Cys	Leu	Cys
1				5					10					15	
Glu	Gly	Ser	Val	Val	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Glu	Lys	Gly	Ser
		20						25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Val	Thr	Gly	Glu	Gly	Thr	Pro	Lys	Pro
	35					40						45			
Glu	Ser	His	Asn	Asn	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
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Gln															
65															

<210> 10
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<210> 13
<211> 65
<212> PRT
<213> Artificial Sequence

<220>
<223> modified hirudin

<400> 13
Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Lys Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asn Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
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<210> 14
<211> 65
<212> PRT
<213> Artificial Sequence

<220>
<223> modified hirudin

<400> 14
Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Arg Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Thr Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
65

<210> 15
<211> 65
<212> PRT
<213> Artificial Sequence

<220>
<223> modified hirudin

<400> 15
Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Ala Lys Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro

	35		40		45										
Glu	Ser	His	Asn	Asp	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
	50				55						60				
Gln															
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<210> 16
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 <212> PRT
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<220>
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	16														
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1				5					10					15	
Glu	Gly	Ser	Val	Val	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Ala	Gln	Gly	Ser
			20					25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Val	Thr	Gly	Glu	Gly	Thr	Pro	Lys	Pro
			35				40					45			
Glu	Ser	His	Asn	Asp	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
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Gln															
65															

<210> 17
 <211> 65
 <212> PRT
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<220>
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	17														
Val	Val	Tyr	Thr	Asp	Cys	Thr	Glu	Ser	Gly	Gln	Asn	Leu	Cys	Leu	Cys
1				5					10					15	
Glu	Gly	Ser	Val	Val	Cys	Gly	Gln	Gly	Asn	Lys	Cys	Ala	Arg	Gly	Ser
			20					25					30		
Asp	Gly	Glu	Lys	Asn	Gln	Cys	Val	Thr	Gly	Glu	Gly	Thr	Pro	Lys	Pro
			35				40					45			
Glu	Ser	His	Asn	Asp	Gly	Asp	Phe	Glu	Glu	Ile	Pro	Glu	Glu	Tyr	Leu
	50				55						60				
Gln															
65															

<210> 18
 <211> 65
 <212> PRT
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<220>
 <223> modified hirudin

<400> 18

Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Ala Thr Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
65

<210> 19

<211> 65

<212> PRT

<213> Artificial Sequence

<220>

<223> modified hirudin

<400> 19

Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Asp Ala Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
65

<210> 20

<211> 65

<212> PRT

<213> Artificial Sequence

<220>

<223> modified hirudin

<400> 20

Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Asp Gln Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
65

<210> 21

<211> 65

<212> PRT

<213> Artificial Sequence

<220>

<223> modified hirudin

<400> 21

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 1          5          10          15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Asp Arg Gly Ser
          20          25          30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
          35          40          45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 50          55          60
Gln
65
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<210> 22

<211> 65

<212> PRT

<213> Artificial Sequence

<220>

<223> modified hirudin

<400> 22

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Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
 1          5          10          15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Lys Gly Ser
          20          25          30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
          35          40          45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 50          55          60
Gln
65
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<210> 23

<211> 65

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<213> Artificial Sequence

<220>

<223> modified hirudin

<400> 23

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 1          5          10          15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Gln Gly Ser
          20          25          30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
          35          40          45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 50          55          60
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Gln
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<210> 24
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<220>
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1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Arg Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
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<210> 25
<211> 65
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1 5 10 15
Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Thr Gly Ser
20 25 30
Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
35 40 45
Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
50 55 60
Gln
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<211> 65
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<213> Artificial Sequence

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1 5 10 15

Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Lys Gly Ser
 20 25 30
 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
 35 40 45
 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 50 55 60
 Gln
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 1 5 10 15
 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Gln Gly Ser
 20 25 30
 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
 35 40 45
 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 50 55 60
 Gln
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<210> 28
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